REMARKS

Claims 1-9 currently remain in the application. Claims 3 and 6 are herein amended.

The drawings, submitted as informal drawings, were objected to for not disclosing some of the "means" mentioned in the claims. Formal drawings prepared by a professional draftsperson are submitted herewith. In these formal drawings, however, these "means" are not additionally drawn. Instead, the specification has been amended to clearly indicate how these "means" are represented in the drawings as originally submitted. This is believed to obviate the Examiner's objection.

Regarding the matter of Paragraph 3 of the Official Letter, applicant takes this opportunity to submit a copy of Japanese Patent Application that serves as the priority document.

Regarding the matter of Paragraph 8 of the Official Letter, applicant hereby affirms that the joint inventors named in the present application were each under the obligation to assign every right regarding the base invention hereof to the assignee throughout the period of time relevant to this application.

Corrections to the title and the specification, as required in Paragraphs 4 and 5 of the Official Letter, have been entered.

Claim 3 was objected to because of an alleged informality. The Examiner is respectfully requested to note that there was actually no informality because the if-clause ("if the difference between said previous first correction value stored in said first memory means and said next first correction value is equal to or greater than a specified value") sandwiched between two commas and spanning from line 2 to line 4 is merely inserted into the wherein-clause starting in line 1. In other words, the wherein-clause starting in line 1 does not end at the beginning of the if-clause but continues on after its end. In order to expedite the prosecution, however, applicant has opted to rewrite claim 3.

Claims 1-9 were rejected under 35 U.S.C. 103 over Sano. The rejection of a claim under 35 U.S.C. 103 over a single cited reference is justified only if it is obvious to incorporate into the rejected claim the inventive element in the rejected claim that is not described in the cited reference. In the present case, as admitted by the Examiner, Sano not only fails to explicitly disclose the calculation of a correction value but also fails to disclose the correcting means for correcting the center position. In the Official Letter the Examiner argues that it is obvious to incorporate these element because they "would be required for the device to compensate for angle error between the light emitting system and light receiving system" (lines 6-7 of page 5). Applicant disagrees for the following reasons and requests that the Examiner reconsider the rejection.

Although Sano does disclose the presence of light emitting and receiving means, a laser diode driver, a scanner and a calculating means (like claim 1 of the instant application, as correctly summarized by the Examiner), Sano discloses nothing more than using these constituent elements for grasping a correspondence relationship between the light emitting element (specified direction) and the photo detecting element (Sano's Abstract). The laser beam emitted in the specified direction is reflected by an object in front and the detecting element that receives the reflected beam is identified, and after this correspondence is grasped, only this photo detecting element is thereafter utilized for the light reception. In other words, the point of Sano's apparatus is to establish a static correspondence relationship between the emitted and received beams.

The device according to this invention is not a static apparatus like Sano's but may be distinguished as being a dynamic device, adapted to be adjusted sequentially, for example, as the vehicle on which this device is installed follows a front running vehicle, to the direction in which the intensity of the received light is the strongest.

Explained more in detail, the rejected claims in the instant application do not fail to disclose the means for specifically determining the vertical position at which the intensity of the received waves is the highest, calculating a correction value from the determined maximum-intensity direction and actually performing the correction according to the calculated correction value. A novel consequence, that becomes achievable according to the instant invention but is not described or even hinted at by Sano, is that the reflected light from the front going vehicle is always receivable, for example, even if the road slopes upward and downward such that the front going vehicle moves upward and downward relative to the vehicle on which the device is installed because the scan direction of the device continues to be adjusted according to the road condition and hence according to the relative vertical position of the front going vehicle.

Another example may be considered where the front going vehicle has a reflector attached at a relatively high position. If the distance to this front going vehicle is sufficiently large, the vertical range (or spread) of the emitted beam from one's own vehicle may be sufficiently large and light reflected by the reflector may be receivable by one's own light receiver. If this distance of separation becomes too small but if the correcting means according to this invention were not provided, however, the reflector of the front going vehicle would come to be outside the range of the light emitting means and the reflected light would fail to be recognized by the light receiving means. With a dynamic device according to the present invention provided with the means for calculating the correction value and actually effecting corrections, by contrast, the scan direction is changed sequentially as the distance of separation between the two vehicles decreases and the angle of elevation of the reflector of the front going vehicle increases accordingly.

As explained above, Sano relates to a static apparatus. Sano is not addressed to and is absolutely silent about this potential problem of losing sight of the front going vehicle because of a change in the slope of the road or the shortening of the distance to the front running vehicle on which the reflector may be attached at a relatively high position. In other words, there was no reason to suggest, as did the Examiner in the Official Letter (at line 6 of page 5), that a correction value of the kind calculated by the calculating means of the instant invention would also be required by Sano. It should be noted in particular that in all 30 columns of Sano's specification, there is not a single statement related to or hinting at the actual correction of the scan direction.

The Examiner is therefore requested to be convinced that a dynamic device according to this invention adapted to keep changing the scan direction from one moment to another is not obvious in view of a static apparatus such as Sano's intended only for grasping the correspondence between emitted and received light. In other words, it is believed that the claims rejected by the Examiner on the obviousness ground are not obvious at all in view of Sano.

An editorial error in claim 6 has been amended, and it is believed that the application is in condition for allowance.

The Examiner has stated in Paragraph 1 of the Official Letter that "corrected drawings" are required in reply to the Office Action. As explained above, the specification having been adjusted in the instant Amendment, there are not going to be any corrections in the drawings. In response to the Examiner's reminder that the requirement for corrected drawings would not be held in abeyance, applicant will submit formal drawings as soon as they are completed.

Respectfully submitted,

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